

CLAIMS

What is claimed is:

1. A head for polishing a wafer, comprising:

5 a carrier;

a retainer ring disposed on a lower edge of said carrier;

10 a supporter disposed in said carrier configured to provide first and second chambers separated from each other, the supporter including a surface portion having a flat surface, a plurality of first holes communicating with said first chamber, and a plurality of second holes communicating with said second chamber; and

a membrane enclosing said surface portion of said supporter, said membrane spaced apart from said surface portion, and having a plurality of third holes corresponding to said first holes.

- 15 2. The apparatus according to claim 1, wherein an edge of said surface portion of said supporter is chamfered.

- 20 3. The apparatus according to claim 1, wherein an edge of said surface portion of said supporter is rounded.

4. The apparatus according to claim 1, wherein said first chamber has a fluid passage communicating external to said polishing head.

- 25 5. The apparatus according to claim 1, wherein said second chamber has a fluid passage communicating external to said polishing head.

6. The apparatus according to claim 1, wherein films are adhered on said flat surface around said first holes, each of said films sized to fit within said third holes.

5 7. The apparatus according to claim 1, wherein each of said films has a thickness less than that of said membrane.

8. The apparatus according to claim 1, wherein at least one of said second holes penetrates a center portion of said supporter, and for the at least one of said second holes, there is no corresponding hole formed in said membrane.

10 9. An apparatus for polishing a wafer comprising:

a carrier;

at least one membrane dividing said carrier to form at least two chambers;

15 a retainer ring disposed on an edge of said polishing head; and

a chucking ring disposed on a lower portion of said polishing head.

10. The apparatus according to claim 9,

20 wherein said polishing head further includes a center supporter disposed in said carrier to provide a first chamber, and a middle supporter disposed in said carrier on the same plane as that of the center supporter, to provide a second chamber;

25 wherein said membrane is composed of first and second membranes enclosing said center and middle supporters separable from surface portions of said supporters; and

wherein said chucking ring is disposed in said carrier to provide a third chamber.

11. The apparatus according to claim 10, wherein a plurality of first holes are formed in said surface portion of said center supporter to communicate with said first chamber, a plurality of second holes are formed in said surface portion of said middle supporter to communicate with said second chamber, and a plurality of third holes are formed in said chucking ring to communicate with said third chamber.

12. The apparatus according to claim 10, wherein said chucking ring is disposed between said center supporter and said middle supporter.

13. The apparatus according to claim 10, wherein said chucking ring is disposed between said middle supporter and an inner surface of said carrier.

14. The apparatus according to claim 10, wherein said first, second and third chambers have respective first, second and third fluid passages communicating externally to said polishing head.

15. The apparatus according to claim 10, wherein said middle supporter is composed of a ring shape.

16. The apparatus according to claim 15, wherein said second membrane is composed of a ring shape corresponding to said middle supporter.

17. The apparatus according to claim 9, wherein films are adhered on said chucking ring around said third holes to operate as a medium in chucking and releasing of said wafer.

18. The apparatus according to claim 10, wherein edges of said surface portions of said center and middle supporters are rounded or chamfered.

19. An apparatus for polishing a wafer comprising:

5 a supporting portion having an abrasive pad disposed thereon;

a polishing head disposed over said abrasive pad; and

said polishing head comprising:

a carrier;

10 at least one membrane dividing said carrier to form at least two chambers;

a retainer ring disposed on an edge of said polishing head; and

a chucking ring disposed on a lower portion of said polishing head.

20. The apparatus according to claim 19, wherein said chucking ring is located
15 between a center supporter and a middle supporter disposed in the carrier.

21. The apparatus according to claim 19, wherein said chucking ring is located
between a center supporter and a middle supporter disposed in the carrier between
a middle supporter and an inner surface of the carrier.

22. An apparatus for polishing a wafer, comprising:

20 a supporting portion having an abrasive pad disposed thereon;

a polishing head disposed over said abrasive pad; and

said polishing head comprising:

25 a carrier;

a retainer ring disposed on a lower edge of said carrier;

a supporter disposed in said carrier configured to provide first and second

chambers separated from each other, the supporter including a surface portion having a flat surface, a plurality of first holes communicating with said first chamber, and a plurality of second holes communicating with said second chamber; and

5 a membrane enclosing said surface portion of said supporter, said membrane spaced apart from said surface portion, and having a plurality of third holes corresponding to said first holes.